



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/AU90/00434 (22) International Filing Date: 19 September 1990 (19.09.90) (30) Priority data: PJ 6613 29 September 1989 (29.09.89) AU (71) Applicant (for AU only): JADELIN PTY. LTD. [AU/AU]; Suite 4, 10 Hoddle Street, Abbotsford, VIC 3067 (AU). (71) Applicant (for all designated States except AU US): HACK, Hilton, Barry [AU/AU]; 262 Serpells Road, Temples- towe, VIC 3106 (AU). (72) Inventor; and (75) Inventor/Applicant (for US only): DAVIS, Frederick, Harry [NZ/AU]; 2/42 Donald Street, Brunswick, VIC 3056 (AU).</p>	<p>(74) Agents: HIND, Raymond, Stenton et al.; Davies &amp; Collis- on, 1 Little Collins Street, Melbourne, VIC 3000 (AU). (81) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE*, DE (European patent)*, DK, DK (European patent), ES, ES (European patent), FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI pa- tent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US.  Published With international search report.</p>	
<p>(54) Title: SOCK FASTENING SYSTEM.</p> <div data-bbox="435 1157 1289 1751"> </div> <p>(57) Abstract</p> <p>A sock fastening system for fastening together a pair of socks comprises an elastic strip (2) on the body of one of the socks and which defines with the sock body a loop which is expandable to receive and retain the body of the other sock.</p>		

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**"SOCK FASTENING SYSTEM"**

The present invention relates to a system for fastening together a pair of socks in order to prevent separation of the socks during and after washing.

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For many years people have faced the frustrating problem of sometimes being unable to locate and pair a number of socks after washing. Sometimes, odd socks are paired when the socks are of the same general colour and type and sometimes a single sock remains and this tends to remain in the washing  
10 basket until its companion sock is found.

There have been proposed fittings for fastening together pairs of socks but these previously proposed systems have necessitated attachments to the socks which tend to cause a degree of discomfort, albeit minor discomfort, to  
15 the wearer if the fitting happens to flap against the ankle or leg of the wearer or catches against clothing. These previously proposed systems have also been unsightly.

According to the invention, there is provided a sock of a pair of socks,  
20 said sock having means for releasable attachment of the other sock of the pair, said means comprising a strip of elastic material attached to the body of the sock at each end of the strip whereby the strip and the adjacent body of the sock between the zones of attachment define a loop having, in the non-extended state of the strip, a perimeter which is less than the perimeter of the  
25 other sock in flattened state whereby upon insertion of the body of the other sock through the loop, the loop will expand by expansion of the elastic strip to retain the body of the second sock within the loop.

Further according to the invention, there is provided a pair of socks,  
30 wherein at least one sock of the pair has means for releasable attachment of the other sock of the pair, said means comprising a strip of elastic material attached at each end to the body of the sock to define therewith a loop, the

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perimeter of the loop relative to the perimeter and thickness of the sock being such that upon insertion of the body of the other sock into the loop from one end of the body, the loop expands circumferentially by elastic expansion of the elastic strip whereby the other sock is retained within the loop.

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An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figures 1 and 2 are views of a sock in accordance with the preferred embodiment; and

10 Figure 3 shows schematically the manner in which the other sock of the pair is attached to the sock.

As shown in the accompanying drawings an elasticated strip 2, which is preferably an elasticated fabric is attached at each end to the leg portion of the sock beyond the foot portion, and preferably to the top of the leg portion of the sock, so that a loop is defined by the elasticated strip 2 and the portion of the sock extending between the ends of the strip. The loop is of a size to receive the body portion of the other sock of the pair so that the two socks can be retained as a pair during washing and subsequently.

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The length of the strip 2 is preferably such that the second sock can be retained within the loop purely by frictional and compressive forces acting on the second sock created by expansion of the strip 2 when the body portion of the second sock is inserted into the loop from either end of the sock body.

25 For this purpose and to ensure that expansion takes place, the circumference of the loop is less than the transverse circumference of the sock when flattened or otherwise collapsed. It has been found that the most satisfactory attachment between the two socks is achieved when the top of the leg portion of the flattened sock is itself folded longitudinally in half (that is folding about an axis longitudinally of the leg portion of the sock) so that when the top portion of the sock is pulled through the loop the leg portion of the sock will be held in a similarly folded or gathered condition within the loop when

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approximately half of the length of the sock body has been pulled through the loop. For this purpose, the circumference of the loop should be less than the transverse circumference of the leg portion of the sock when folded longitudinally; as will be apparent, this dimension will be dependant not only  
5 on the size of the sock, but also the thickness of the material. An unexpanded loop length of from about 50 to 70 mm (as determined by a length of elastic strip of from 25 to 35 mm between its points of attachment), has been found to suit most socks in current production.

10        Although the loop is designed to adequately retain the second sock purely by frictional and compressive forces, the user may wish the added security of tying the second sock into a simple loose knot around the loop after insertion.

15        Although the orientation of the loop on the sock is not critical to its function of securing the two socks together, its orientation does affect the comfort of the sock to the wearer. In particular, when the elastic strip is orientated in a longitudinal direction on the sock body, the presence of the strip will not be discernible to the wearer. In contrast, however, if the loop  
20 were to be positioned obliquely or transversely so as to extend horizontally in the finished sock, the elasticated strip would be subject to expansion when the sock expands in circumference upon being fitted to the foot and leg and this would result in some rucking of the portion of the sock adjacent the strip; this which would cause a slight degree of discomfort and would also affect the  
25 smooth appearance of the sock. Comfort in a sock is achieved when the wearer is not aware of the presence of the sock and even small irritations can be a major source of discomfort after many hours wear. By orienting the loop longitudinally the loop is not subjected to any elongation during wear and the presence of the loop cannot be felt by the wear.

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The loop also does not adversely affect the appearance of the sock.

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It is to be noted that although the simple expedient of a separate loop attached at one end either to the side or top of the sock would provide a suitable means for attaching the two socks, it would be totally unsatisfactory to the comfort of the wearer as the loop would tend to flap against the leg or

5 foot of the wearer and/or might rub against clothing.

The elastic strip is formed separately from the sock itself and is simply attached to the sock during manufacture by stitching to the sock at each end of the strip.

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Although it is only strictly necessary for one sock of each pair to be equipped with the fastening loop described, in practice both socks of the pair would be so equipped.

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The embodiment has been described by way of example only and modifications are possible within the scope of the invention.

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## CLAIMS:

1. A sock of a pair of socks, said sock having means for releasable attachment of the other sock of the pair, said means comprising a strip of elastic material attached to the body of the sock at each end of the strip whereby the strip and the adjacent body of the sock between the zones of attachment define a loop having, in the non-extended state of the strip, a perimeter which is less than the perimeter of the other sock in collapsed state whereby upon insertion of the body of the other sock through the loop, the loop will expand by expansion of the elastic strip to retain the body of the other sock within the loop.
2. A sock according to claim 1, wherein the periphery of the loop in its unexpanded state is less than the transverse circumference of the leg portion of the sock when the sock is folded longitudinally in flattened form.
3. A sock according to claim 2, wherein the length of the strip between the zones of attachment to the body of the sock is substantially from 25mm to 35mm.
4. A sock according to any one of claims 1 to 3, wherein the strip is attached to the body of the sock so as to extend longitudinally thereof.
5. A pair of socks, wherein at least one sock of the pair has means for releasable attachment of the other sock of the pair, said means comprising a strip of elastic material attached at each end to the body of the sock to define therewith a loop, the perimeter of the loop relative to the perimeter and thickness of the sock being such that upon insertion of the body of the other sock into the loop from one end of the body, the loop expands circumferentially by elastic expansion of the elastic strip whereby the other sock is retained within the loop.

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6. A pair of socks according to claim 5, wherein the strip is attached to the leg portion of the said one sock so as to extend longitudinally of the leg portion.



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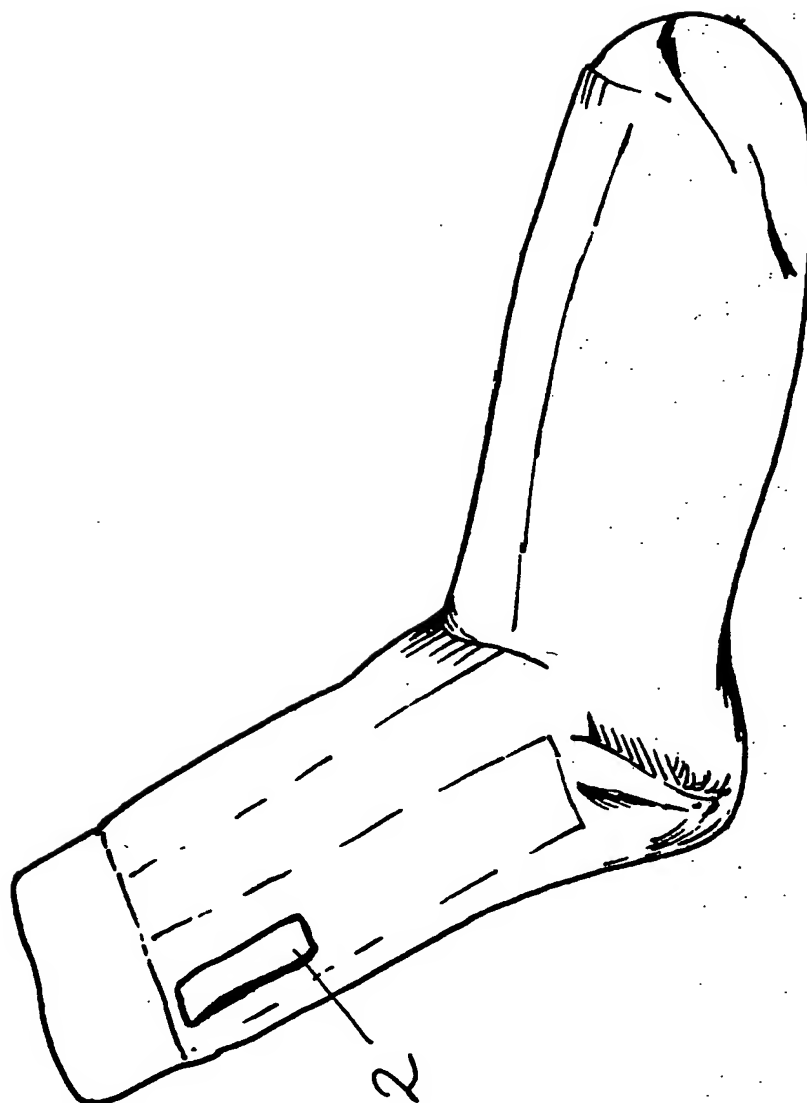


FIGURE 1

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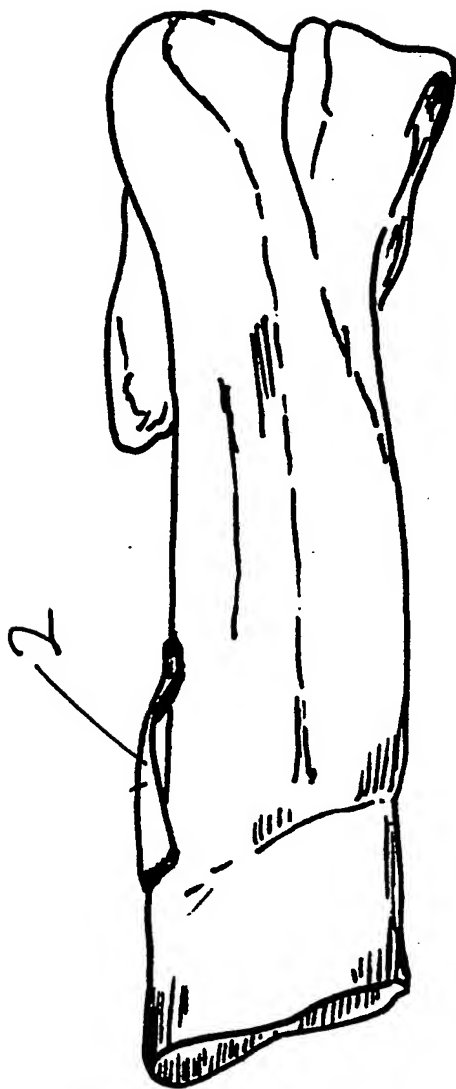


FIGURE 2

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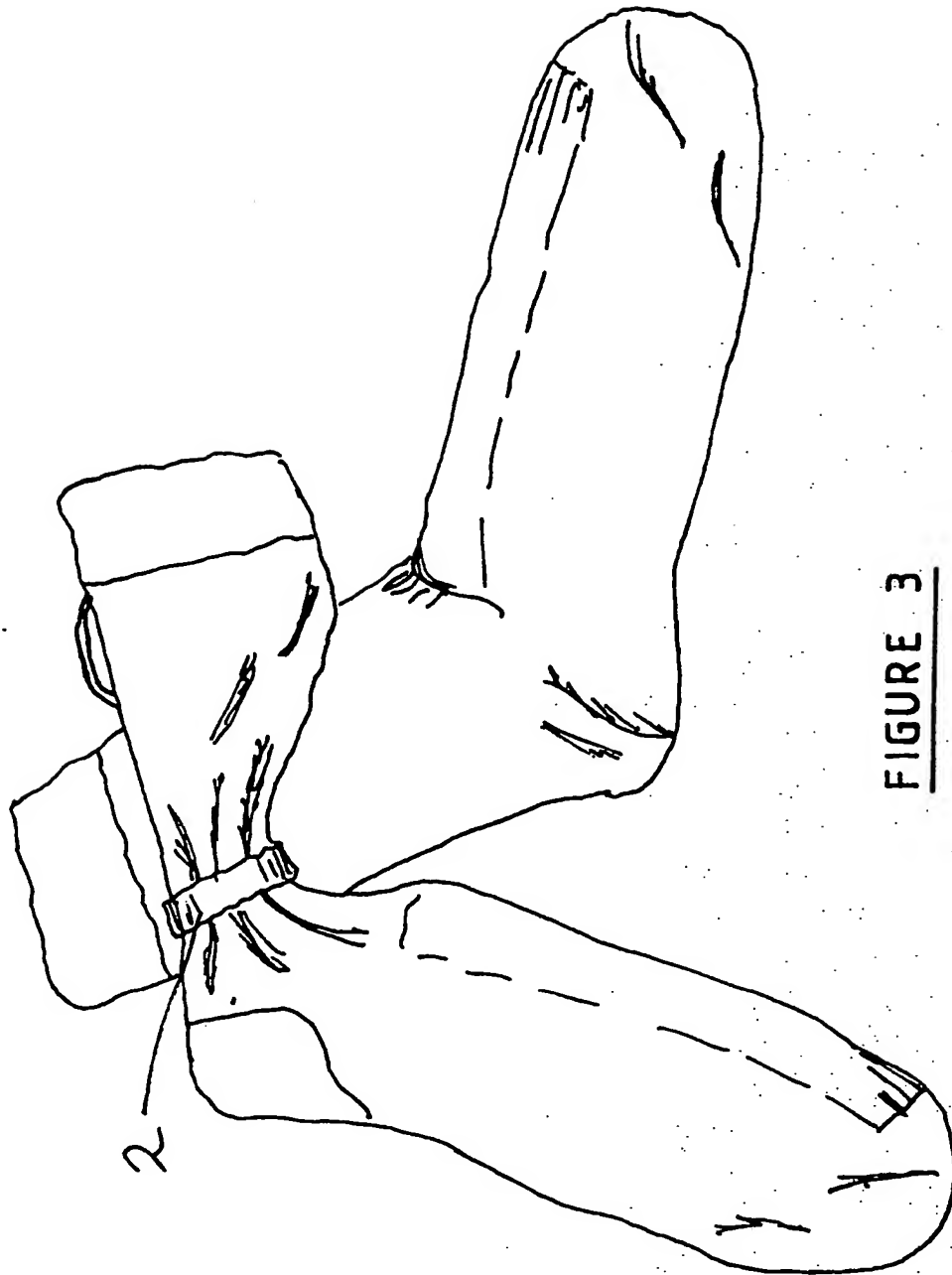
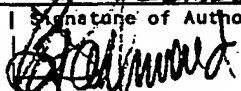


FIGURE 3

# INTERNATIONAL SEARCH REPORT

International Application No. **PCT/AU 90/00434**

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) 6		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int. Cl. <sup>5</sup> A43B 17/00, 17/18, A45C 13/00, 13/30		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched 7		
Classification System	Classification Symbols	
IPC	A43B 17/00, 17/18, A45C 13/00, 13/30	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched 8		
AU : IPC as above		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT</b> 9		
Category*	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages 12	Relevant to Claim No 13
A	SEARS CATALOGUE, Fall/Winter Edition, issued 1984, Page 546	(1)
<p>* Special categories of cited documents: 10</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"G" document member of the same patent family</p>		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search 28 November 1990 (28.11.90)		Date of Mailing of this International Search Report 19 December 1990
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